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IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 1, 3, 4, 9, 12, 14, 17, 19-21, 24, and 27-51 without prejudice or disclaimer, and AMEND claims 2, 5-8, 10, 11, 13, 15, 16, 18, 22, 23, 25, and 26 in accordance with the following:

1. (Cancelled)

2. (Currently Amended) A workshop facility designing and operating method, ~~comprising which comprises~~

a virtual workshop verifying process of formulating a virtual workshop, that is a data model, by storing in a computer

information concerning structures of various production facilities and physical distribution facilities of an existing or newly established workshop having a portion or the whole that is newly designed,

information concerning functions of the various facilities,

information concerning control devices of the various facilities,

information concerning configurations and information concerning adjustment conditions necessary to adjust the production facilities and the physical distribution facilities, and

information concerning operating conditions and layouts of the various facilities of the workshop,

wherein a simulating means of the computer receives settings of the adjustment conditions and the operating conditions and utilizes the information stored in the computer to simulate productivity during operation of the virtual workshop, during which

virtual products are manufactured in the virtual workshop,

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production state, including production of the virtual products, production of virtual work in process, and distribution state, including flow of virtual work in process and flow of finished virtual products is monitored, to thereby verify the virtual workshop functions of a manufacturing facility or process step and a physical distributing facility of process step and information on a layout of these facilities and for verifying a production state and a physical distribution state on the layout by means of a simulating means by causing the virtual workshop to perform a quasi-production activity;

a workshop deployment development process of constructing an actual workshop including various utilizing the facilities and the layout layouts compatible with in the data model of the verified virtual workshop so verified, and

a remote monitoring process of

remote monitoring the production state and the physical distribution state of the facilities in the layout employed in the actual workshop so constructed, and

comparing the production state and the physical distribution state that have been monitored, with the productions state and the physical distribution state that have been simulated a result of remote monitoring and the verification performed during the virtual workshop verifying process.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The workshop facility designing and operating method as claimed in Claim 1 ~~claim 2~~, wherein during the verifying process performed by the simulating means obtains a quality of a product being produced ~~is one of items that are to be verified.~~

6. (Currently Amended) The workshop facility designing and operating method as claimed in Claim 1 ~~claim 2~~, further comprising:

wherein the facility simulating section is capable of performing verification by causing a program for executing procedures of operating the production facility, to be quasi-executed stored on the computer, to formulate the virtual workshop,

wherein the simulating means simulates the production state and the physical distribution state to verify the virtual workshop by executing the program.

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7. (Currently Amended) The workshop facility designing and operating method as claimed in ~~Claim 1~~claim 2, wherein the simulating means ~~is capable of performing verification corresponding to change in process step resulting from change in morphology~~simulates the production state and the physical distribution state to verify the virtual workshop when an arrangement of the facility of the workshop is changed.

8. (Currently Amended) The workshop facility designing and operating method as claimed in ~~Claim 1~~claim 2, wherein the plural production facilities are a dedicated unitary equipment in which modular units are interchangeably fitted one at a time to a common process machine and the simulating means ~~is capable of performing verification corresponding to change of~~simulates the production state and the physical distribution state to verify the virtual workshop when the modular units are changed.

9. (Cancelled)

10. (Currently Amended) The workshop facility designing and operating method as claimed in ~~Claim 4~~claim 2, wherein during the workshop deployment process, information on operating conditions set during the virtual workshop verifying process ~~is~~are transmitted as an ~~instruction through a data communication means to the production facility and a production step.~~

11. (Currently Amended) The workshop facility designing and operating method as claimed in ~~Claim 1~~claim 2, wherein during the remote monitoring process a remote maintenance of the facility is performed ~~with use of~~using a result of the remote monitoring.

12. (Cancelled)

13. (Currently Amended) A workshop facility design and ~~operation~~work support system, which ~~comprises~~comprising:

a virtual workshop system including a computer, the system including
a virtual workshop authoring means ~~for authoring a virtual workshop by storing in the computer~~
information concerning structures of various production facilities and
physical distribution facilities of a workshop,
information concerning functions of the various facilities.

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information concerning control devices of the various facilities,
information concerning configurations and information concerning
adjustment conditions necessary to adjust the production facilities and the physical production
facilities, and
information concerning operating conditions of and layouts of the various
facilities of the workshop, and
a simulating means
receiving settings of the adjustment conditions and the operating
conditions, and
utilizing the information stored in the computer to simulate productivity
during operation of the virtual workshop, during which
virtual products are manufactured in the virtual workshop,
production state, including production of the virtual products,
production of virtual work in process, and distribution state, including flow of virtual work in
process and flow of finished virtual products is monitored, to thereby verify the virtual
workshop that is a model constructed according to layout information on functions of various
production facilities and physical distribution facilities of a workshop, and a simulating means for
verifying a production state and a physical distribution state on the layout by causing the virtual
workshop to perform a quasi-production activity; and
a remote monitoring means for
remote monitoring the production state and the physical distribution state of the
facilities in the layout employed in an actual workshop constructed according to the model of the
virtual workshop so verified, and
comparing the production state and physical distribution state with the production
state and distribution state that have been simulated by the simulating means.

14. (Cancelled)

15. (Currently Amended) The workshop facility design and ~~operation~~work support system as claimed in ~~Claim~~claim 13, further comprising a link means for performing a link process between the virtual workshop system and a remote monitoring system.

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16. (Currently Amended) The workshop facility design and operation-work support system as claimed in Claim-claim 13, wherein a product to be manufactured in the workshop is a mechanical component having a rolling element.

17. (Cancelled)

18. (Currently Amended) A virtual workshop system, including a computer, which is a system ~~for verifying to verify~~ a workshop, the system including wherein a plurality of production facilities are a dedicated unitary equipment having modular units that can be interchangeably fitted one at a time to a process machine of a common specification, while some of production facilities are arranged in a plural number to define a production line, ~~which the system comprises comprising:~~

a virtual workshop authoring means ~~for authoring a virtual workshop by storing in the computer~~

information concerning structures of various production facilities and physical distribution facilities of a workshop,

information concerning functions of the various facilities,

information concerning control devices of the facilities,

information concerning configurations and information concerning adjustment conditions necessary to adjust the production facilities and the physical distribution facilities, and information concerning operating conditions and layouts of the various workshop facilities that is a data model constructed based on information on functions of various production facilities and physical distribution facilities of the workshop and an layout of these facilities, and a simulating means for verifying a production state and a physical distribution state on the layout by causing the virtual workshop so authored to perform a quasi production activity; and

a simulating means to

receive settings of the adjustment conditions and the operating conditions,
and

utilize the information stored in the computer to simulate productivity during operation of the virtual workshop, during which

virtual products are manufactured in the virtual workshop,

production state, including production of the virtual products, production of virtual work in process, and distribution state, including flow of virtual work in process and flow of finished virtual products is monitored, to thereby verify the virtual workshop,

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wherein the simulating means verifies the virtual workshop by simulating the production state and the physical distribution state when is capable of performing verification corresponding to various changes in a production line including exchange of a modular units-unit of the production facility is interchanged.

19-21. (Cancelled)

22. (Currently Amended) A virtual workshop-remote monitoring link system, comprising which comprises:
a virtual workshop system as defined in ~~Claim 17~~ claim 18;
a remote monitoring system ~~for~~ remote monitoring an actual workshop corresponding to ~~this the~~ the virtual workshop; and
a link means ~~for~~ performing a linking process between the virtual workshop system and the remote monitoring system,
wherein the remote monitoring system is capable of performing a remote maintenance.

23. (Currently Amended) The virtual workshop-remote monitoring link system as claimed in ~~Claim~~ claim 22, wherein the remote monitoring system is
capable of interactively performing a remote monitoring and a remote maintenance, and
capable of displaying an image of an operator at a workshop side and alphanumeric information to be used for monitoring or remote maintenance in side-by-side fashion and also capable of transmitting with voice.

24. (Cancelled)

25. (Currently Amended) The workshop facility design and operation support system as claimed in ~~Claim~~ claim 22, wherein a product to be manufactured in the workshop is a mechanical component having a rolling element.

26. (Currently Amended) A workshop-verifying system complex, comprising:
an actual workshop; and
a virtual workshop system,

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wherein the actual workshop includes a production line defined by production facilities and physical distribution facilities,

a plurality of production facilities form respective production line constituent elements, each facility being a dedicated unitary equipment in which modular units are interchangeably fitted one at a time to a common process machine, and

wherein the virtual workshop system is a virtual workshop system as defined in ~~Claim~~ claim 18.

27-51. (Cancelled)